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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/755,292	01/13/2004	Yoshiharu Hayashi	056207.50393C2	1330

23911 7590 05/02/2005

CROWELL & MORING LLP  
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WASHINGTON, DC 20044-4300

EXAMINER
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DESTA, ELIAS

ART UNIT	PAPER NUMBER
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2857

DATE MAILED: 05/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/755,292

Applicant(s)

HAYASHI ET AL.

Examiner

Elias Desta

Art Unit

2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 December 2004.  
 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5-15 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 5-15 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 30 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 4) ☐ Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) ☐ Notice of Informal Patent Application (PTO-152)  
 6) ☐ Other: \_\_\_\_\_.

## Detailed Action

### Response to Applicant's Remarks

#### Terminal Disclaimer

1. The terminal disclaimer filed on December 30, 2004 disclaiming the terminal portion of any patent granted on this application, which would extend beyond the expiration date of the full statutory term defined in 35 U.S.C. § 154 to § 156 and § 173, as presently shortened by any terminal disclaimer, of any patent granted based on patent application serial No. 10/218,488 has been reviewed and is accepted. The terminal disclaimer has been recorded.

#### Amendment

2. The Examiner accepts the amendment to the specification and drawing filed on December 30, 2004.

#### Priority Claimed

3. The Japanese priority document JP 2001-052779 has a filing date of February 27, 2001. This priority date predates the effective U.S. filing date of Ridolfo (U.S. PAP 2003/0216888), that is March 28, 2001. Hence, applicant's arguments, see remarks, filed December 30, 2004, with respect to the rejections of claims 5, 8 and 14 under 35 U.S.C. § 102 (e) have been fully considered and are

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persuasive. However, upon further consideration, a new ground(s) of rejection is made in view of Cohen et al. (U.S. Patent 5,621,654), Laws (ORBIT, 'Bently Performance™ Software: New Capability and Value for Data Manager® 2000') and Shumuta (ASCE Publication, 'Cost Effective Model for Renewal Planning of Electric Power Facilities').

### Claim rejection – 35 U.S.C. 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5-7 and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen et al. (U.S. Patent 5,621,654, hereon Cohen) in view of Laws (ORBIT, 'Bently Performance™ Software: New Capability and Value for Data Manager® 2000').

In reference to claims 5 and 14: Cohen teaches a system for preparation of operation and maintenance plan for power generation installation (see Cohen, Figs. 1-3 and column 3, lines 1-20). Plant data are obtained from plurality of power generation units (see Cohen, Figs. 1, 2 and column 4, lines 37-41). The power generation efficiency for concerned power generation efficiency is calculated in real time by using obtained plant data (see Cohen, column 9, lines 25-49). However,

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Cohen does not teach the efficiency for the concerned power generation units is also a function of design data of the concerned power generation unit for the purposes of maintenance planning for the respective power generation units.

Laws teaches an asset management evaluation module for gas turbines, compressors, pumps, steam turbines and generators (see Laws, page 23, last paragraph, System Architecture figure where plant control and automation and system interfaced with the data management software). Laws further teaches that the turbine performance module provide accurate calculation of turbine performance indicators, including thermal efficiency, heat rate, compressor section polytropic efficiency and turbine isentropic efficiency and power where expected performance data at site conditions is compared with current performance, and deviations are quantified (see Laws, page 24, 'Gas Turbine Performance Module', 1<sup>st</sup> and 2<sup>nd</sup> paragraphs).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system for preparation of operation and maintenance plan for power generation installation as taught by Cohen and incorporate design data in order to compute power generation efficiency as a function of plant and design data as noted in Laws, because Laws enables the user to obtain performance loss due to compressor, combustion system, and turbine degradation where financial or cost of operation would be monitored directly (see Laws, page 24, 1<sup>st</sup> column, end of 4<sup>th</sup> paragraph).

In reference to claims 6, 7 and 15 as noted above in claims 5 and 14, Cohen in combination with Laws teaches that the system further includes:

- A means to obtain plant data from the plurality of power generation units via the respective communication networks (see Cohen, Fig. 1, Intra-Plant Network);
- A means for determining deviation values between process values obtained according to machine and apparatus model (see Laws, design parameters as noted in the figure sited in page 24); and
- Given the design features noted in Cohen in combination with Laws, the module noted would have enabled an ordinary skill in the art to obtain cost of economic loss caused by the power generation efficiency reduction of the concerned power generation unit calculated from the determined deviation value and cost related to the exchange of the machine, apparatus and parts in concerned power generation unit because Laws in page 24, paragraph 4, teaches that the financial impact of reduced performance would be monitored directly, and the primary source of performance loss would be monitored.

With regard to claims 11, 12 and 13 Cohen further teaches that the service center stores data related to the machine and apparatus of the power generation units (see Cohen, column 9, lines 8-25) for every plurality of electric power generations.

However, storing the brand names of the machine and apparatus in database based on service reliability is a matter of data source management since Cohen has indicated that the devices are already connected to the Intra-Plant Network and their service can easily be monitored by the dispatcher or service center (see Cohen, column 7, lines 42-54 and column 8, lines 1-18). Therefore, maintenance and operation plans can be arranged according to manufacturers brand name with a flag to show the quality and reliability assurance of individual brand preferences.

6. Claims 8, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen (U.S. Patent 5,621,654) in view of Shumuta (ASCE Publication, 'Cost Effective Model for Renewal Planning of Electric Power Facilities').

In reference to claims 8, 9 and 10: Cohen teaches an operation and maintenance planning aiding system for a power generation installation. Further, Cohen in Fig. 4 shows that the service center stores data pertains to failure histories of the machine and apparatus in mass storage. However, Cohen does not disclose the method of computing a failure probability of the machine and apparatus of the failure histories in a database.

Shumuta teaches a total cost assessment model, which includes maintenance, damage, and progressive deterioration cost associated with electric power facilities. The model uses a probability concept to compute various risk assessment factors (see Shumuta, page 3-4).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the operation and maintenance planning aiding system as taught by Cohen, and incorporate failure probability model from Shumuta from failure data stored in a database, because computing failure probability (see Shumuta, page 4, equation 10) would help the service personnel or provider to obtain a better risk assessment that would help to maintain or renew the power plants for continued cost-effective power delivery with controlled cost (see Shumuta, Tables 2, 3 and Fig.2).

### Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elias Desta whose telephone number is (571)-272-2214. The examiner can normally be reached on M-Thu (8:30-7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (571)-272-2216. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-872-9306 for regular communications and for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-1782.



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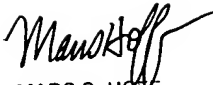
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Elias Desta  
Examiner  
Art Unit 2857

-ed

April 18, 2005

  
MARC S. HOFF  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800